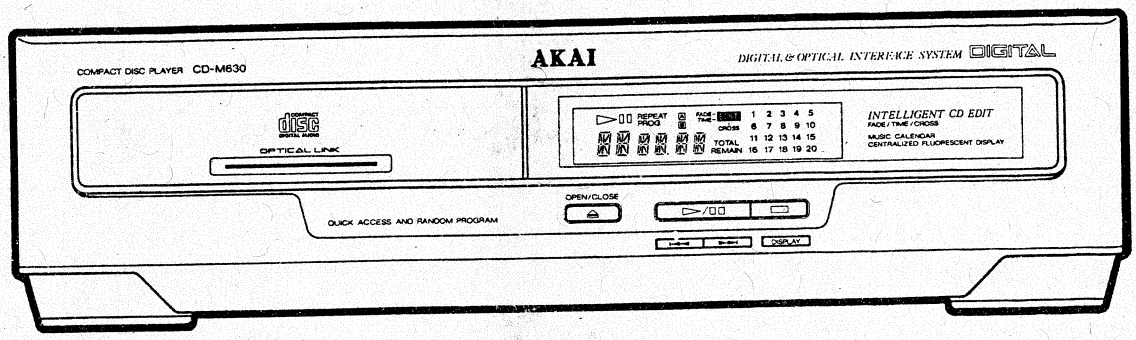
# AKAI SERVICE MANUAL




COMPACT disc DIGITAL AUDIO

## COMPACT DISC PLAYER

## MODEL CD-M630

## SPECIFICATIONS

| | |
|---|---|
| Pick up | 3 beam laser pick up |
| Error correction system | Cross interleave reed solomon |
| Number of channels | 2 channel stereo |
| Wow & flutter | Less than measurable limits |
| Optical output level | – 22 dBm / 660 nm |
| Power requirements | Supplied from amplifier (model AX-M430 / AM-M630 / AM-M830) |
| Dimensions | 360 (W) × 95 (H) × 295 (D) mm |
| Weight | 2.6 kg |

**Standard accessories**

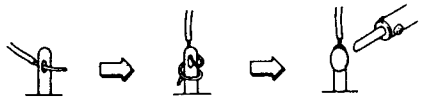
| | |
|---|---|
| Optical cable | ×1 |
| Operator's manual | ×1 |

*** For improvement purposes, specifications and design are subject to change without notice.**

# ★ SAFETY INSTRUCTIONS

## PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ (*) symbol are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.
   These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

## SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.
The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal-input/output connectors, etc.) and the earth ground through a resister of 1500 ohms paralleled with a 0.15 µF capacitor, under the unit's normal working conditions. The leakage-current should be less than 0.5 mA rms AC.
The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 Mohms.



# ★ INFORMATION

## PRECAUTIONS BEFORE/AFTER REPAIRING THE UNIT

### [ ABOUT THE POWER SUPPLY ]

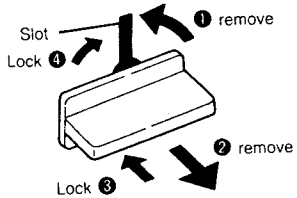
Power supply and power control data for the CD-M630 are supplied from the amplifier and tuner. Therefore when repair of the CD-M630 is necessary, repair should be made together with the amplifier and tuner.
To repair the CD-M630 without the tuner, use the following procedure, it can be repaired together with the amplifier only.

1. When amplifier is AM-M630 or AM-M830
   While pushing G.E REC button on the amplifier, press the POWER button on the amplifier to turn the power of the amplifier on.
2. When amplifier is AX-M430
   While pushing the PLAY (▷) button, press the POWER button to turn the power of the AX-M430 on.

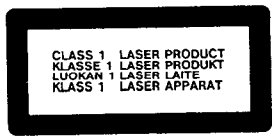
While pushing the DISPLAY and ▶▶| buttons simultaneously on the CD-M630, connect the flat connection cable from the CD-M630 to the amplifier to turn the power of the CD-M630 on.
To turn off the power of the amplifier and CD-M630, the AC power cord must be disconnected.

### [ ABOUT THE TRANSPORT LOCKING PLUG ]

This CD player has transport locking plugs located on the bottom panel. These plugs are locks the laser pick up mechanism to prevent vibration during transportation.
Before playback, make sure to remove the locking plugs.
Before transporting the unit, make sure to remove the compact disc, and insert the transport locking plugs to lock the laser pick up mechanism.




### [ EUROPE, SCANDINAVIA, UK and AUSTRALIA ]

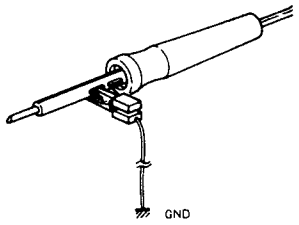



Label affixed on the rear panel of the unit

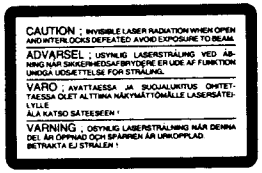
### [ PRECAUTIONS IN REPAIRING ]

When repairing or adjusting the unit, please note the following points.

1. Do not put excessive pressure on the mechanical parts (operation parts), including the pick up block, as extremely high mechanical precision is required in these parts.
2. When the base is removed for repair or adjustment, make sure that there are no metal objects in the narrow gap between the P.C boards or the mecha. parts and the base.
3. The micro-computer and the CD signal processing ICs can be damaged by static electricity or leakage from a soldering iron during repair.
   While soldering, use a low leakaged (anti static) type soldering iron or take precautions against leakage as in the illustration below.




4. Do not loosen any screws in the pick up block.
   When handling the pick up block, please refer NOTE or CAUTION accompanying the explanation of procedure.
5. For your own safety, avoid hazardous invisible laser radiation. Do not look at the laser beam (objective lens) directly.
6. On models for some countries, laser warning labels are affixed on the outside and inside the unit as shown below.
   For your own safety, read these labels carefully when repairing or adjusting the unit.

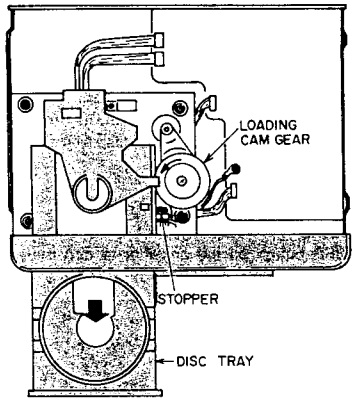

CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO : AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE.
ÄLÄ KATSO SÄTEESEEN !
VARNING : OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD.
BETRAKTA EJ STRÅLEN !

Label affixed on the disc clamper inside the unit

# I. DISASSEMBLY

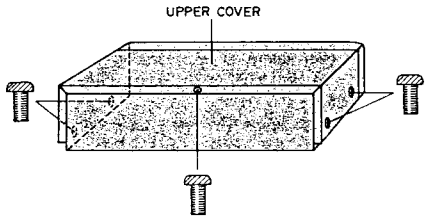
In case of trouble, etc., necessitating dismantling, please dismantle in the order shown in the illustrations.
Reassemble in reverse order.

2. Removal of the DISC TRAY

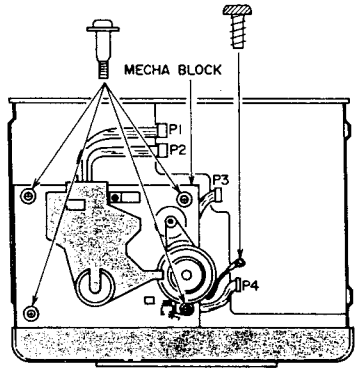



1) Set the DISC TRAY to EJECT position by turning the LOADING CAM GEAR counter-clockwise, then pull out the DISC TRAY while pushing the DISC TRAY STOPPER down.

1. Removal of the UPPER COVER




3. Removal of the MECHA BLOCK




[ NOTE ]
Before disconnecting the connectors P1 and P2 to remove the MECHA. BLK, make sure that the P.C board on the PICK UP BLOCK has been short circuited (refer to 3-2. REPLACEMENT OF THE PICK UP BLOCK).



# II. PRINCIPAL PARTS LOCATION

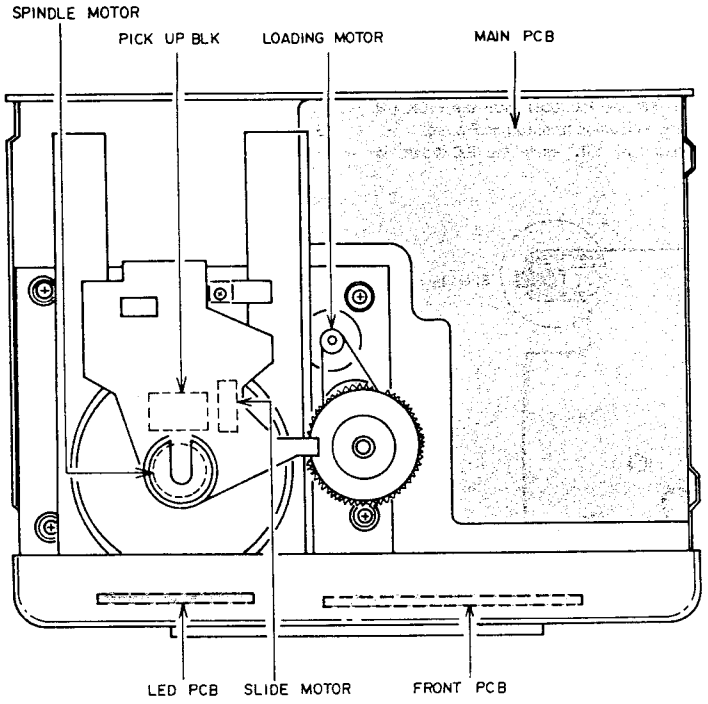



Fig. 2-1 Top view

# III. REPLACEMENT OF THE PICK UP BLOCK AND MOTORS

NOTE: For your own safety, avoid hazardous invisible laser radiation. Make sure that the power switch is OFF when removing the DISC CLAMPER.

## 3-1. REMOVAL OF THE DISC CLAMPER

1) Remove the DISC CLAMPER by pulling it up and moving it to left.

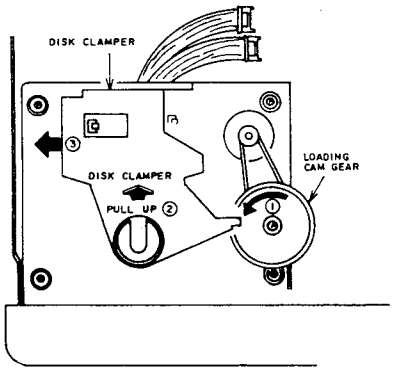



Fig. 3-1

## 3-2. REPLACEMENT OF THE PICK UP BLOCK

**[ PRECAUTION BEFORE REMOVING THE PICK UP BLOCK ]**

When disconnecting or connecting the connectors P1 and P2, make sure that the P.C board (on the PICK UP BLOCK) has been short circuited as shown in Fig. 3-2.
Do not turn the electricity "ON" while the P.C board is short circuited.

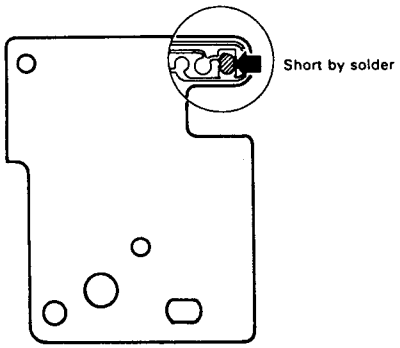



Fig. 3-2

1) Disconnect the connectors P1 and P2 on the PICK UP BLOCK.
2) Push the Ⓑ part of the pick up block SLIDE SHAFT and pull it in the arrowed direction to remove the PICK UP BLOCK.
3) Reassemble in reverse order.

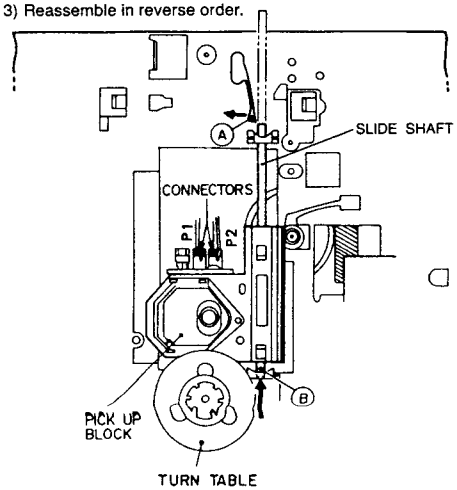



Fig. 3-3

## 3-3. REPLACEMENT OF THE SPINDLE MOTOR

1) Turn the Ⓐ GEAR HOLDER LEVER counter-clockwise (Fig. 3-4), then pull out the SLIDE GEAR.
2) Keep the PICK UP BLOCK away from the SPINDLE MOTOR ( ⬆ direction as shown in Fig. 3-5).
3) Remove the two SPINDLE MOTOR fixation screws through the hole on the TURN TABLE (Fig. 3-5), then remove the SPINDLE MOTOR.
4) Reassemble in reverse order.

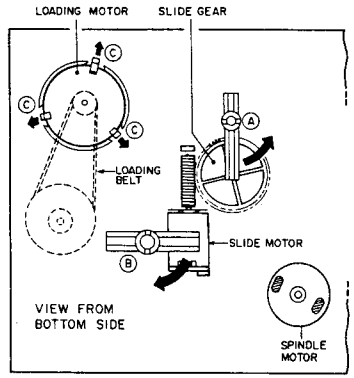



Fig. 3-4

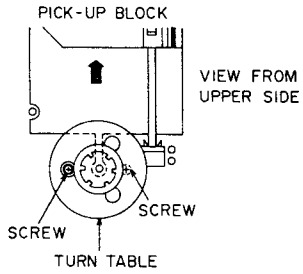



Fig. 3-5

## 3-4. REPLACEMENT OF THE LOADING MOTOR

1) Remove the LOADING BELT, then remove the LOADING MOTOR while releasing the © hooks (Fig. 3-4).
2) To reassemble, push in the LOADING MOTOR and replace the LOADING BELT.

## 3-5. REPLACEMENT OF THE SLIDE MOTOR

1) Turn the Ⓑ SLIDE MOTOR HOLD LEVER (Fig. 3-4) clockwise, then pull out the SLIDE MOTOR.
2) Reassemble in reverse order.

**[ ABOUT THE TEST MODE ]**

1) This test mode is used for adjustment or checking.
2) How to engage the TEST mode.
   While pushing the ⏮ and ⏭ buttons simultaneously on the front panel, connect the flat connection cable to the amplifier, .
3) Push the ⏏ button to advance the TEST mode number. When the TEST mode number is initialized, push the □ button.
4) Disconnect the flat connection cable from the amplifier to exit from the TEST mode.

| STEP | ADJUSTMENT ITEM |
|---|---|
| 1. Test disc<br>2. Mode or TEST mode number<br>3. Test point and ADJ. part<br>4. • Remarks<br>*Result | |

Test Point  Adjustment Part

TEST mode number and functions

| TEST mode number | Functions |
|---|---|
| 1 | • Indicates that unit is engaged in the TEST mode. |
| 12 | • Indicates the end of FOCUS SEARCH. |
| 123 | • Engaged in the CLV-S mode. Tracking servo gain is set to the same setting as "JUMP" mode. |
| 1234 | • Tracking servo is on. |
| 12345 | • Unit is engaged in the normal play mode without anti shock function. |
| 12345<br>6 | • Unit is engaged in the normal play mode. |
| 12345<br>67 | • Tray is open |
| 12345<br>678 | • Tray is close |

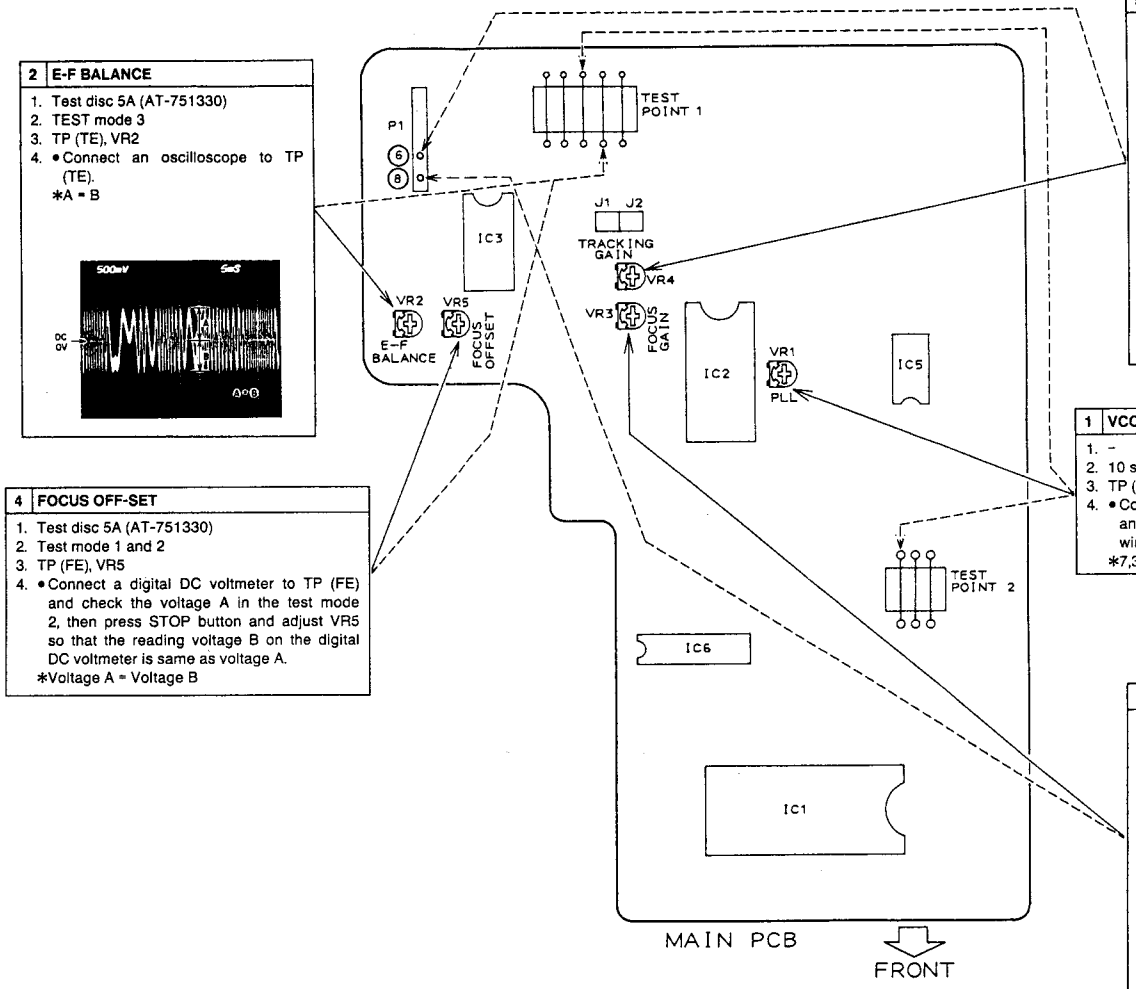
**2 E-F BALANCE**

1. Test disc 5A (AT-751330)
2. TEST mode 3
3. TP (TE), VR2
4. • Connect an oscilloscope to TP (TE).
   *A = B



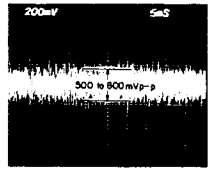

**4 FOCUS OFF-SET**

1. Test disc 5A (AT-751330)
2. Test mode 1 and 2
3. TP (FE), VR5
4. • Connect a digital DC voltmeter to TP (FE) and check the voltage A in the test mode 2, then press STOP button and adjust VR5 so that the reading voltage B on the digital DC voltmeter is same as voltage A.
   *Voltage A = Voltage B




**5 TRACKING SERVO GAIN**

1. Test disc 5A (AT-751330)
2. PLAY
3. Pin ⑧ (TRK) of the connector P1, VR4
4. • Connect an oscilloscope to pin ⑧ (TRK) of the connector P1.
   *500 to 800 mVp-p

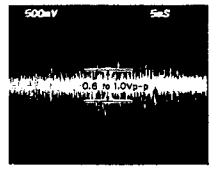



**1 VCO**

1. –
2. 10 seconds after power is on.
3. TP (WFCK), VR1
4. • Connect a frequency counter to TP (WFCK) and connect TP (EFM) to GND by jumper wire.
   *7,350 Hz

**3 FOCUS SERVO GAIN**

1. Test disc 5A (AT-751330)
2. PLAY
3. Pin ⑧ (FCS) of the connector P1, VR3
4. • Connect an oscilloscope to pin ⑧ of the connector P1.
   *0.6 to 1.0 Vp-p



# V. PARTS LIST

**ATTENTION**

1. **When placing an order for parts, be sure to list Part No., Model No. and the description of eachpart. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.**
2. **Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.**
3. **Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.**

## HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

### 2. HEAD BASE BLOCK

| Ref.No. | Part No. | Description |
|---|---|---|
| 1 | BH-T2023A320A | HEAD BASE BLOCK |
| 2 | HP-H2206A010A | HEAD R/P PR4-8FU C |
| 3 | ZS-477876 | PAN20×03STL CMT |
| 4 | ZS-536488 | BID20×08STL CMT |
| 5 | ZG-402895 | SP CS ANGLE ADJUST |

SP (Service Parts) Classification

This number corresponds with the individual parts index number in that figure.

b) PC Board

### 6. MAIN PC BOARD

| Ref.No. | Part No. | Description |
|---|---|---|
| IC1 | EI-324536 | IC HD14049BP |
| IC2 | EI-336801 | IC MB8841-564M |
| C1A | EC-338399 | C MMY V 223M 250AC [U,E,B,S] |
| C1B | EC-350949 | C MMY V 223M 250DC [J] |
| C1C | EC-338397 | C MMY V 223M 125AC [C,A] |
| X1 | EI-318384 | OSC X'TAL NC-18C |

Symbols for primary destination

[A] : AAL (U.S.A) [S] : SAA (Australia)
[B] : BEAB (England) [U] : U/T (Universal Area)
[C] : CSA (Canada)
[E] : CEE (Europe) [V] : VDE (W. Germany)
[J] : JPN (Japan) [Y] : Custom Version

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

**WARNING**

**⚠ (*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.**

**AVERTISSEMENT**

**⚠ (*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉDE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT.**

## 1.RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

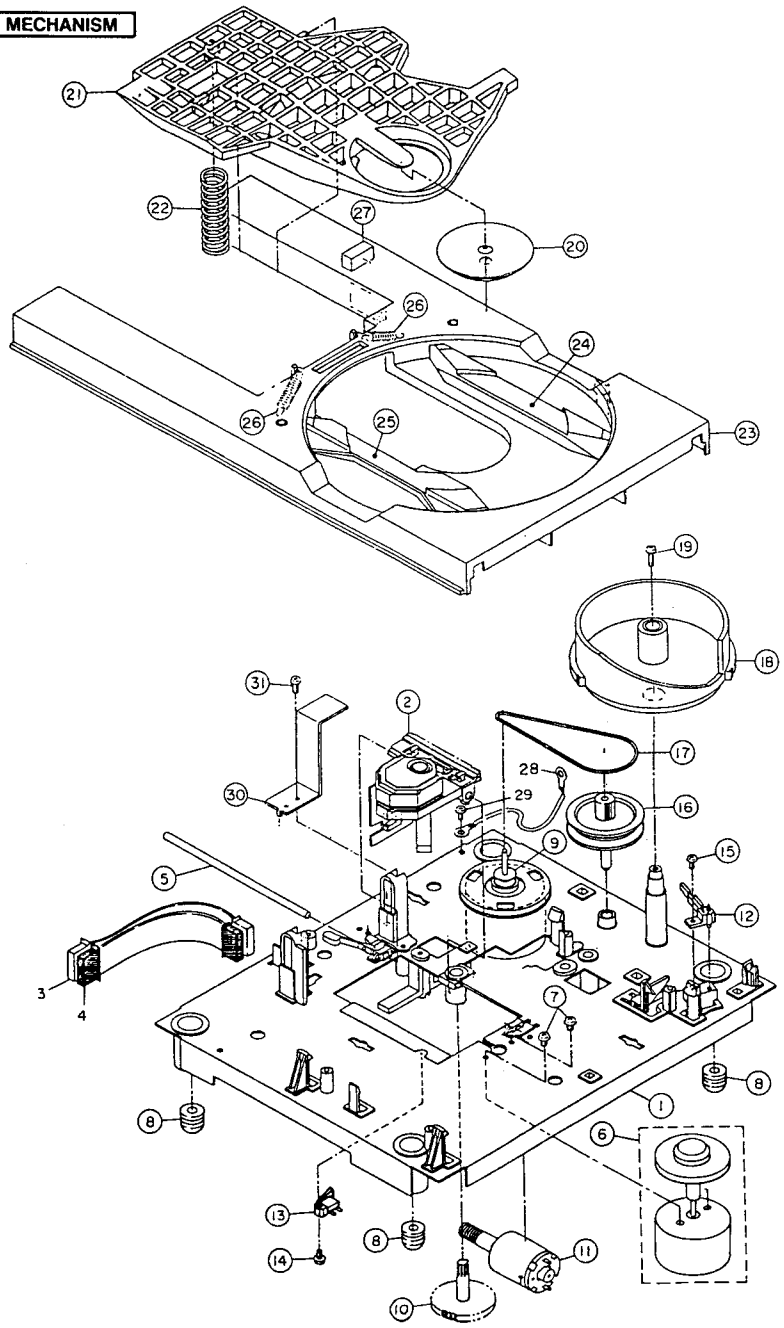
| Ref.No. | Part No. | Description |
|---|---|---|
| 1 | BM-392868M | SG MOTOR LOADING PART (2) |
| 2 | BM-392869M | SG MOTOR SLIDE PART |
| 3 | BM-392867M | SG MOTOR SPINDLE PART |
| 4 | *BO-394728J | PICK UP KSS-210A |
| 5 | ED-394416J | D LED SLV-31VT3F RED |
| 6 | ED-307572 | D SILICON H 1SS131 |
| 7 | *ED-389840J | D SILICON 1SR139-100HS F10 |
| 8 | ED-403743J | D ZENER H HZS6B3 |
| 9 | ED-387783J | D ZENER H HZS6C3L F05 |
| 10 | ED-387820J | D ZENER H HZS9A2L F05 |
| 11 | EI-389264J | IC BA6209N |
| 12 | EI-390112J | IC CXA1081S |
| 13 | EI-390120J | IC CXA1082BS |
| 14 | EI-368610 | IC CXD1135Q |
| 15 | EI-382251J | IC LC3517BS-15 |
| 16 | EI-405338J | IC UPD75212ACW FXA2CD2-285 |
| 17 | EI-390149J | OSC CE CST4.23MGW 4.230MHZ |
| 18 | EI-381139J | OSC X'TAL HC-49/U 16934.400KHZ |
| 19 | EJ-394490J | SOCKET OPTICAL GP1F32T |
| 20 | EM-389466J | IND FL FIP8CYM7 CHARACTER |
| 21 | ES-368603 | SW LEAF MSW-1585 |
| 22 | ES-393376J | SW LEAF SPPB22 01-1 |
| 23 | ES-394818J | SW TACT SOR-123HS T05 |
| 24 | ET-360399 | TR DTC114TS |
| 25 | ET-354365 | TR DTC114YS |
| 26 | ET-354371 | TR DTC124ES |
| 27 | ET-373392 | TR DTC124XS |
| 28 | ET-353899 | TR 2SA1317 S,T,U |
| 29 | ET-394555J | TR 2SA1515 Q,R |
| 30 | ET-394495J | TR 2SA934 Q,R |
| 31 | ET-394919J | TR 2SB1329 Q,R T05 |
| 32 | ET-394494J | TR 2SC2060 Q,R F05 |
| 33 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| 34 | ET-394554J | TR 2SD1379 |
| 35 | ET-394917J | TR 2SD2005 Q,R T05 |
| 36 | ET-394916J | TR 2SD2037 E,F T05 |
| 37 | EW-394419J | WIRE ASSY P2059 12P |
| 38 | MB-368590J1 | BELT LOADING |

## 2. CD MECHANISM

| Ref.No. | Part No. | Description |
|---|---|---|
| 1 | MA-380689M | CHASSIS MECHA OUTSERT PART |
| 2 | *BO-394728J | PICK UP KSS-210A |
| 5 | MS-368348 | SHAFT |
| 6 | BM-392867M | SG MOTOR SPINDLE PART |
| 7 | ZS-367463 | PAN20X025STL CMT |
| 8 | MB-368350 | CUSHION RUBBER |
| 9 | BM-392868M | SG MOTOR LOADING PART (2) |
| 10 | MZ-368349M | GEAR WORM WHEEL |
| 11 | BM-392869M | SG MOTOR SLIDE PART |
| 12 | ES-368603 | SW LEAF MSW-1585 |
| 13 | ES-393376J | SW LEAF SPPB22 01-1 |
| 14 | ZS-536488 | BID20X08STL CMT |
| 15 | ZS-343082 | PT BR26X08STL CMT |
| 16 | MR-394361M | PULLEY GEAR(B) |
| 17 | MB-368590J1 | BELT LOADING |
| 18 | MZ-388217M | CAM GEAR LOADING |
| 19 | ZS-365391 | PT BR30X08STL CMT C080 |
| 20 | MZ-368347M | CLAMPER |
| 21 | SZ-374136M | HOLDER CLAMPER |
| 22 | ZG-368591J1 | SP PUSH CLAMP |
| 23 | SC-382692M 2 | DISK TRAY S PART |
| 24 | MZ-382686M | HOLDER DISC S-(R) |
| 25 | MZ-382687M | HOLDER DISC S-(L) |
| 26 | ZG-368592 | SP PULL DISK HOLD |
| 27 | MB-377975 | STOPPER RUBBER |
| 30 | MZ-378828J | ANGLE TRAY |
| 31 | ZS-432843 | PAN26X04STL CMT |

NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

## CD MECHANISM



## 3. P.C BOARD

| Ref.No. | Part No. | Description |
|---|---|---|
| 1 | BB-P2060T020A | ML PC(#) MAIN BLK CD-M630/ML |

PC (#) MAIN BLK CONSISTS OF FOLLOWING P.C BOARD.
- MAIN P.C BOARD
- FRONT P.C BOARD
- LED P.C BOARD

## 4. MAIN P.C BOARD

| Ref.No. | Part No. | Description |
|---|---|---|
| D1 | *ED-389840J | D SILICON 1SR139-100HS F10 |
| D2 | *ED-389840J | D SILICON 1SR139-100HS F10 |
| D3 | *ED-389840J | D SILICON 1SR139-100HS F10 |
| D4 | *ED-389840J | D SILICON 1SR139-100HS F10 |
| D5 | ED-387783J | D ZENER H HZS6C3L F05 |
| D6 | ED-387783J | D ZENER H HZS6C3L F05 |
| D7 | ED-403743J | D ZENER H HZS6B3 |
| D8 | ED-387820J | D ZENER H HZS9A2L F05 |
| D9 | ED-307572 | D SILICON H 1SS131 |
| D10 | ED-307572 | D SILICON H 1SS131 |
| D13 | ED-307572 | D SILICON H 1SS131 |
| D14 | ED-387783J | D ZENER H HZS6C3L F05 |
| D15 | ED-307572 | D SILICON H 1SS131 |
| IB1 | EH-394546J | COMP R RKC9DS 223J |
| IC1 | EI-405338J | IC UPD75212ACW FXA2CD2-285 |
| IC2 | EI-390120J | IC CXA1082BS |
| IC3 | EI-390112J | IC CXA1081S |
| IC4 | EI-368610 | IC CXD1135Q |
| IC5 | EI-382251J | IC LC3517BS-15 |
| IC6 | EI-389264J | IC BA6209N |
| J4 | EJ-394490J | SOCKET OPTICAL GP1F32T |
| R50 | ER-382474J | R OMF H S10 FS 1/2W 1R2J |
| TR1 | ET-394554J | TR 2SD1379 |
| TR2 | ET-394555J | TR 2SA1515 Q,R |
| TR4 | ET-353899 | TR 2SA1317 S,T,U |
| TR8 | ET-353899 | TR 2SA1317 S,T,U |
| TR9 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR10 | ET-394916J | TR 2SD2037 E,F T05 |
| TR11 | ET-394495J | TR 2SA934 Q,R |
| TR12 | ET-394916J | TR 2SD2037 E,F T05 |
| TR13 | ET-394919J | TR 2SB1329 Q,R T05 |
| TR14 | ET-394494J | TR 2SC2060 Q,R F05 |
| TR15 | ET-394495J | TR 2SA934 Q,R |
| TR16 | ET-394917J | TR 2SD2005 Q,R T05 |
| TR17 | ET-394919J | TR 2SB1329 Q,R T05 |
| TR18 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR19 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR20 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR21 | ET-397160J | TR 2SC3330 R,S,T,U,V |
| TR22 | ET-373392 | TR DTC124XS |
| TR23 | ET-373392 | TR DTC124XS |
| TR24 | ET-354371 | TR DTC124ES |
| TR25 | ET-360399 | TR DTC114TS |
| TR26 | ET-360399 | TR DTC114TS |
| TR27 | ET-360399 | TR DTC114TS |
| TR28 | ET-373392 | TR DTC124XS |
| TR29 | ET-373392 | TR DTC124XS |
| TR30 | ET-373392 | TR DTC124XS |
| TR31 | ET-373392 | TR DTC124XS |
| TR32 | ET-354365 | TR DTC114YS |
| VR1 | EV-393741J | R S-FIX H T05 RH064JC 0.3W 102 |
| VR2 | EV-390872J1 | R S-FIX H T05 RH0638C 0.1W 223 |
| VR3 | EV-390872J1 | R S-FIX H T05 RH0638C 0.1W 223 |
| VR4 | EV-390872J1 | R S-FIX H T05 RH0638C 0.1W 223 |
| VR5 | EV-390873J1 | R S-FIX H T05 RH0638C 0.1W 472 |
| X1 | EF-381139J | OSC X'TAL HC-49/U 16934.400KHZ |
| X2 | EI-390149J | OSC CE DST4.29MGW 4.290MHZ |

## 5. FRONT P.C BOARD

| Ref.No. | Part No. | Description |
|---|---|---|
| D101 | ED-307572 | D SILICON H 1SS131 |
| D102 | ED-307572 | D SILICON H 1SS131 |
| D103 | ED-307572 | D SILICON H 1SS131 |
| IN1 | EM-389466J | IND FL FIP8CYM7 CHARACTER |
| SW1 | ES-394818J | SW TACT SOR-123HS T05 |
| SW2 | ES-394818J | SW TACT SOR-123HS T05 |
| SW3 | ES-394818J | SW TACT SOR-123HS T05 |
| SW4 | ES-394818J | SW TACT SOR-123HS T05 |
| SW5 | ES-394818J | SW TACT SOR-123HS T05 |
| SW6 | ES-394818J | SW TACT SOR-123HS T05 |

## 6. LED P.C BOARD

| Ref.No. | Part No. | Description |
|---|---|---|
| D201 | ED-394416J | D LED SLV-31VT3F RED |
| D202 | ED-394416J | D LED SLV-31VT3F RED |
| D203 | ED-394416J | D LED SLV-31VT3F RED |
| D204 | ED-394416J | D LED SLV-31VT3F RED |

## 7. FINAL ASSEMBLY

| Ref.No. | Part No. | Description |
|---|---|---|
| 1 | SP-401752M | PANEL FRONT |
| 2 | SA-394136M | CUSHION FOOT |
| 3 | SZ-401762M | RING FOOT |
| 5 | SE-402579M | FILTER FLD(CD)-B |
| 6 | SE-401761M | WINDOW |
| 8 | SK-401763M | BUTTON OPERATION |
| 9 | SA-394127M1 | FOOT REAR |
| 10-A | SP-402644M | PANEL REAR CD-M630(U) [U] |
| 10-B | SP-402643M | PANEL REAR CD-M630(E) [E,V] |
| 11 | EW-394419J | WIRE ASSY P2059 12P |
| 12 | SE-394119M | LENS OPTICAL |
| 13 | SE-394121M | REFLECTOR OPTICAL |
| 14 | SP-401764M | PANEL TRAY |
| 15 | SZ-401759M | WINDOW TRAY |
| 16 | SP-394096M | COVER UPPER AT |
| 17 | ZS-387983J | ST BID30X08STL BNI EARTH LOCK |
| 18 | ZS-331182 | BT BID30X08STL BNI |
| 19 | ZS-394114M | SCREW GRADUATED |
| 20 | ZS-378163 | SCREW GRADUATED |

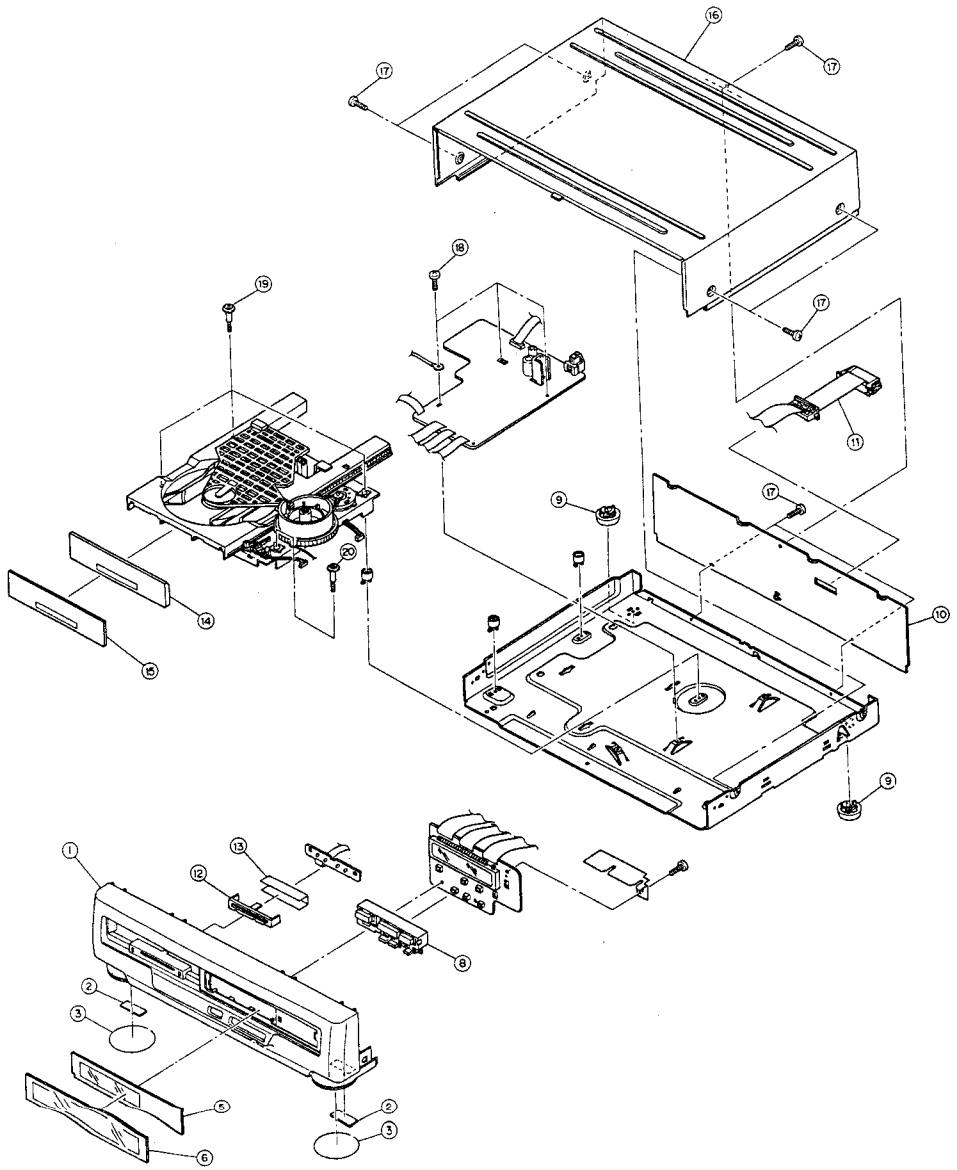
NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

## 8. ACCESSARY

| Ref.No. | Part No. | Description |
|---|---|---|
| 1 | AX-385911J | CORD P2187-60A |



## FINAL ASSEMBLY



# AKAI

## MODEL CD-M630

## SCHEMATIC DIAGRAMS AND PC BOARDS

TABLE OF CONTENTS


1. BLOCK DIAGRAM ..... 3
2. SCHEMATIC DIAGRAM ..... 4
3. MAIN AND OTHER PC BOARDS ..... 5
4. INFORMATION OF ICs ..... 6

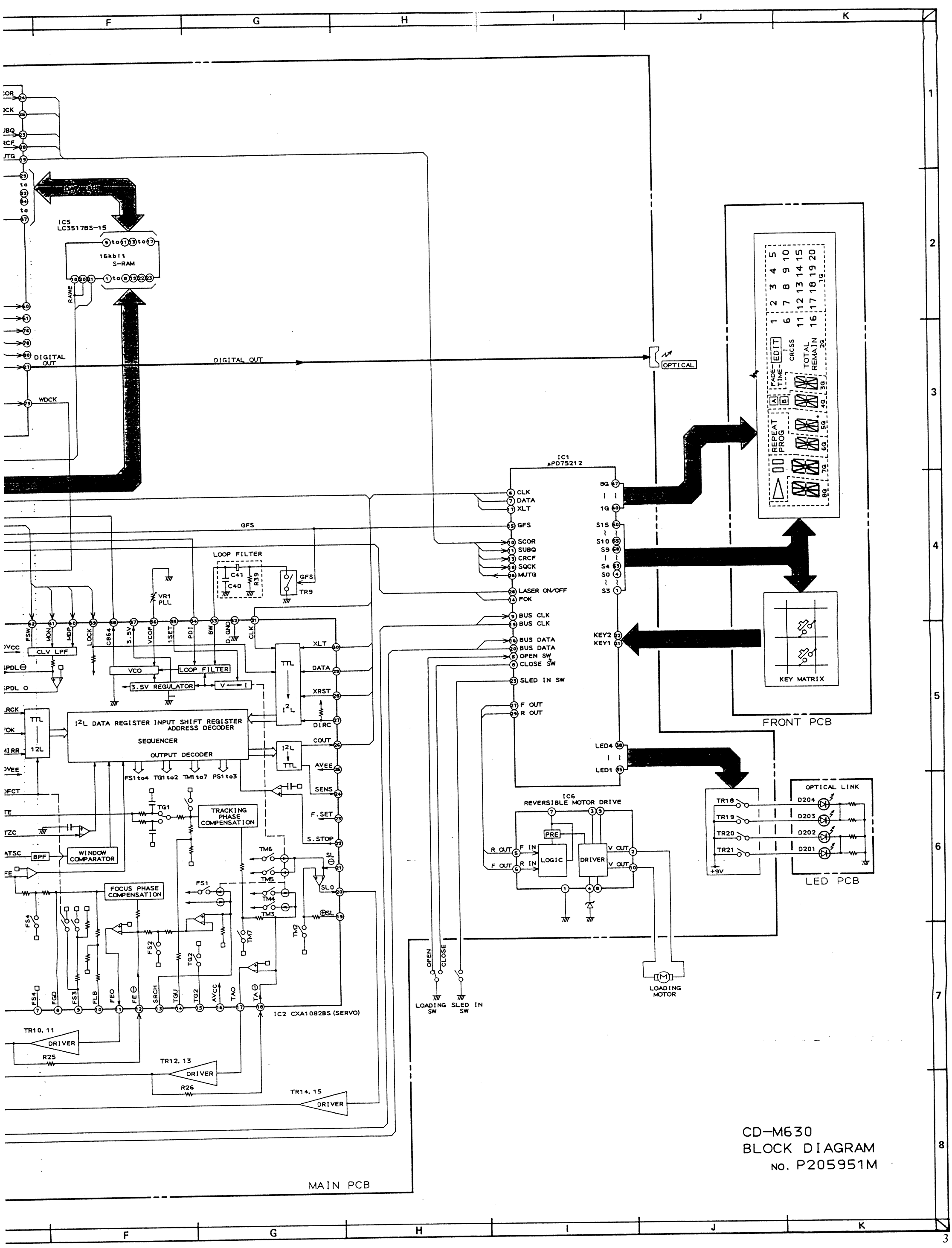
IC4 CXD1125Q (DIGITAL SIGNAL PROCESSOR)

SCOR
SQCK
SUBQ
CRCF
MUTG
HF
SLICE LEVEL
SUBCODE SYNC DETECTOR
SUBCODE DEMODULATOR
SUBCODE Q REGISTER
EFM-PLL
23 bit SHIFT REGISTOR
EFM DEMODULATOR
GFS
FSW
M_ON
M_DP
M_DS
LOCK
CLV SERVO CONTROL
FRAME SYNC DETECTOR/ PROTECTOR/INSERTER
ERROR DETECTOR/ CORRECTOR
VCO OUT
VCO IN
VCO CIRCUIT TIMING GENERATOR
INTERPOLATOR
X'TAL OUT
X'TAL IN
X'TAL CURCUIT TIMING GENERATOR
DIGITAL FILTER
SELECTOR
DIGITAL OUT
TRACKING COUNTER
CPU INTERFACE
RAM ADDRESS GENERATOR
WDCK
CN IN
RESET
CLK
LT
DATA
SENS
RAWE
RACS
DATA BUS
IC5 LC3517BS-15
16kbit S-RAM
RAWE
DIGITAL OUT
DIGITAL

IC3 CXA1081S (RF-AMP)

PICK UP BLK
KSS-210A
+5V
-5V
LD
PD
A
B
C
D
F
E
TP
TP
R12
TR8
LD DRIVE
APC LD AMP
APC PD AMP
RF, I-V AMP
RF, I-V AMP
F, I-V AMP
E, I-V AMP
RF SUMMING AMP
TRACKING ERROR AMP
FOK AMP
EFM COMPARATOR
AUTO ASYMMETRY CONTROL AMP
FOCUS ERROR AMP
LD ON
FOCUS OK
TRACKING ERROR
FOCUS ERROR
TP1
VR2
E-F BALANCE
R16
R20
R21
VR2
FOCUS OFF-SET
VR4
TRACKING GAIN
VR3
FOCUS GAIN
FOCUS COIL
TRACKING COIL
SPINDLE MOTOR
SLED MOTOR
FOCUS SERVO LINE
TRACKING SERVO LINE
SPINDLE MOTOR SERVO LINE
SLED MOTOR SERVO LINE
TR16, 17 DRIVER
TR10, 11 DRIVER
TR12, 13 DRIVER
R25
R26
J3
TO AMPLIFIER
BUS CLK
BUS DATA
+9V
+5V
-5V
-9V
D1~D4
TR1 +5V REG
TR2, 4 -5V REG

FOK
DVCC
SPDL⊖
SPDL ⊙
LRCK
FOK
MIRR
DVEE
DFCT
TE
TZC
ATSC
FE
BPF
WINDOW COMPARATOR
TTL 12L
I²L DATA REGISTER INPUT SHIFT REGISTER
ADDRESS DECODER
SEQUENCER
OUTPUT DECODER
FS1 to 4 TG1 to 2 TM1 to 7 PS1 to 3
CLV LPF
VCO
LOOP FILTER
3.5V REGULATOR
VR1 PLL
C41
C40
FSW MON MDP LOCK C654 3.5V VCOF 1SET PD1 BW GND
FS4 FGD FS3 FLB FEO FE⊖ SRCH TGU TG2 AVCC TAO
TG1
TG2
FS1
FS2
FS4
FOCUS PHASE COMPENSATION
TRACKING PHASE COMPENSATI




CD-M630
BLOCK DIAGRAM
NO. P205951M

IC5
LC35178S-15
S RAM
DSP
IC4
CXD1125Q (Z)
X1
HC49/U 16934.400KHz
TR24
DTC124ES
TP2
C1F1
C2FL
WFCK
DIGITAL
OUTPUT
CD OPTICAL
RF AMP
IC3
CXA1081S
TR8
2SA1317 (S. T. U)
P1
LASER
GND
MONITOR
LD REF
FCS
TRK
FOCUS COIL
TRACKING
COIL
P2
PD F
PD E
VCC
PD A
PD B
PD C
PD D
PICK UP
SONY
KSS-210A
E-F BALANCE
CENTER
VOLTAGE
BUFFER
TRACKING
ERROR AMP
FOCUS
OFFSET
TR27
DTC114TS
TR26
DTC114TS
OSC STOP
TP1 EFM
TP1 TE
TP1 FE
J2
JM-2W-96
J1
JM-2W-96
P5
RE-H42TD-1190
SENS
TRK
FCS
TR28
DTC124XS
TR29
DTC124XS
TR22
DTC124XS
TR30
DTC124XS
TR23
DTC124XS
BUS DATA
SERVO
IC2
CXA1082BS
TRACKING GAIN
FOCUS GAIN
WINDOW
COMPARATOR
FOCUS
PHASE
COMPEN-
SATION
TRACKING
PHASE
COMPENSATION
OUTPUT
DECODER
INPUT
SHIFT
REGISTER
ADDRESS
DECODER
I²L DATA
REGISTER
CLV
LPF
3.5V
REGU-
LATOR
VCO
LOOP
FILTER
V→I
FOCUS DRIVE
TRACKING DRIVE
SLED DRIVE
TR10
2SD2037
(E, F)
TR11
2SA934
(Q, R)
TR12
2SD2037
(E, F)
TR13
2SB1329
(Q, R)
TR14
TR15
POWER
TR1
2SD1379
TR4
2SA1317
(S, T, U)
TR2
2SA1515 (Q, R)
D1, D2, D3, D4
1SR139-100
TO AX-M830/M630, AX-M430 POWER SUPPLY
J3
GND
AC
GND
AC
BUS DATA
BUS CLK
VF (AC 4.2V)
VF (AC 4.2V)
-VP (-32V)
GND
CD POWER
GND
AC4.2V
AC4.2V
-32V
⚠ MAIN PCB P2059A501A
: B (POWER SUPPLY) LINE
: SIGNAL LINE
: FOCUS SERVO LINE
: TRACKING SERVO LINE
: SPINDLE MOTOR SERVO
: SLIDE MOTOR SERVO LI

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W (J)
ALL CAPACITORS IN μF 50WV (J)

WARNING: ⚠ AND ▮ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS
AVERTISSMENT: ⚠ ET ▮, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

INDICATED VOLTAGES ARE MEASURED AT PLAY MODE.

: B (POWER SUPPLY) LINE
: SIGNAL LINE
: FOCUS SERVO LINE
: TRACKING SERVO LINE
: SPINDLE MOTOR SERVO LINE
: SLIDE MOTOR SERVO LINE

# CD-M630
# SCHEMATIC DIAGRAM
## NO. P206001M

PRINCIPAL PARTS LOCATION

ICS

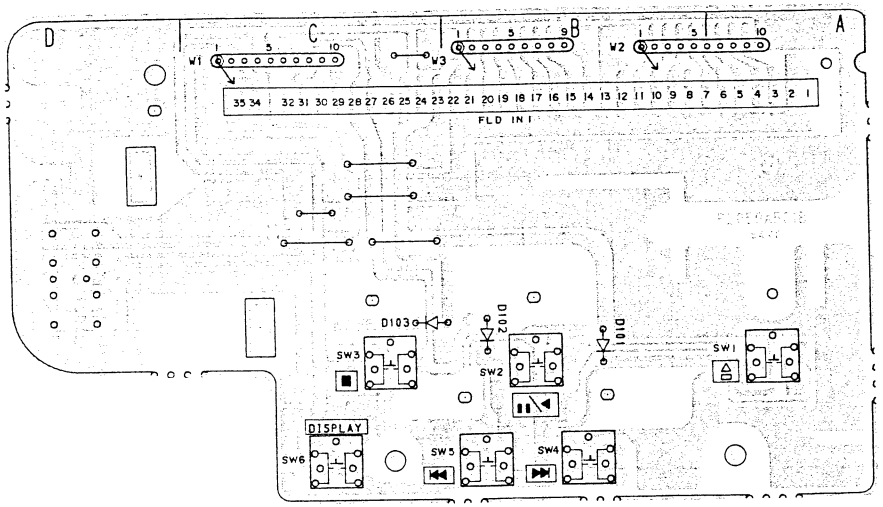
IC1.....A,B3,4
IC2.....D3
IC3.....E1
IC4.....C5
IC5.....D4,5
IC6.....B3

CONNECTORS

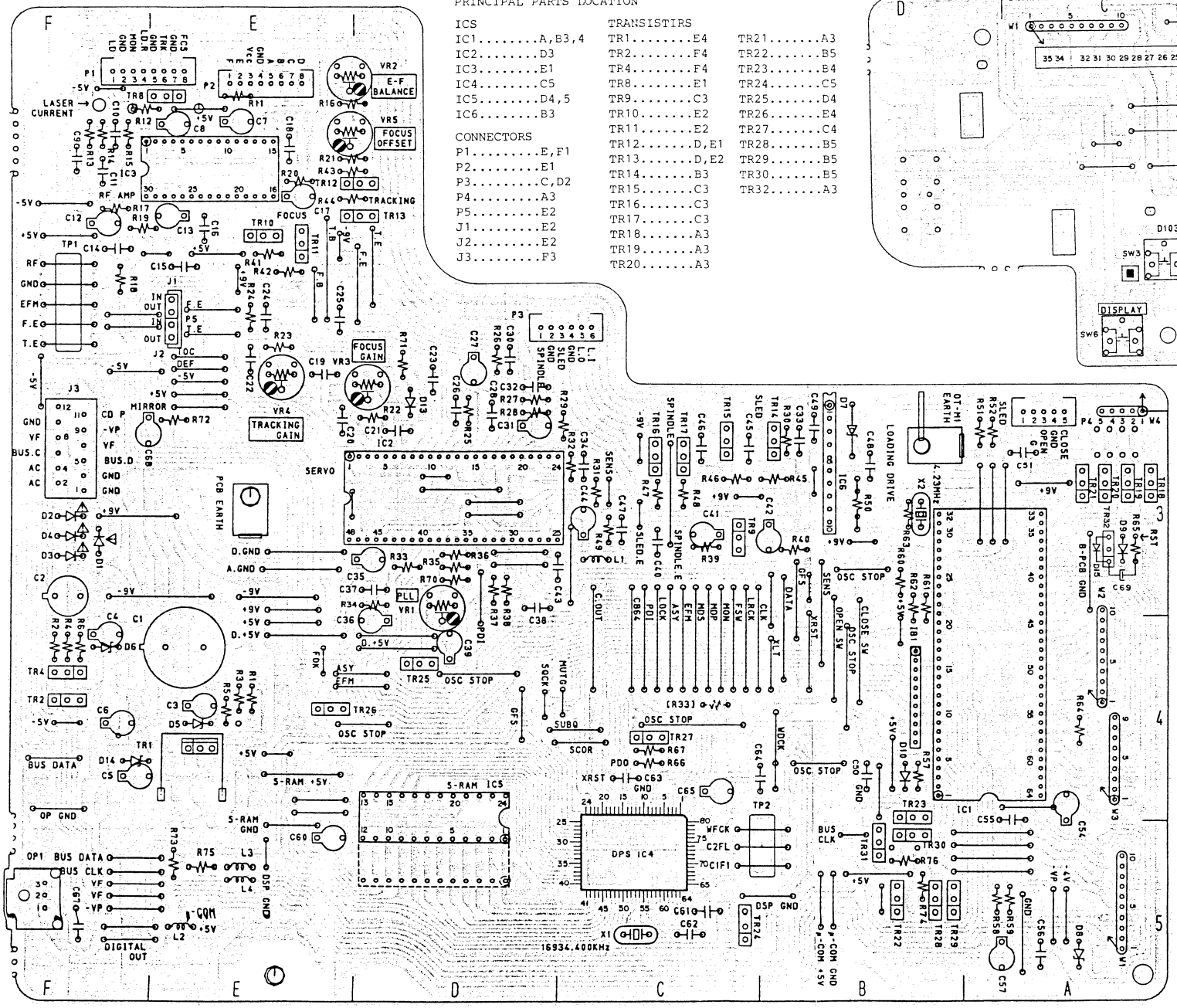
P1.....E,F1
P2.....E1
P3.....C,D2
P4.....A3
P5.....E2
J1.....E2
J2.....E2
J3.....F3

TRANSISTIRS

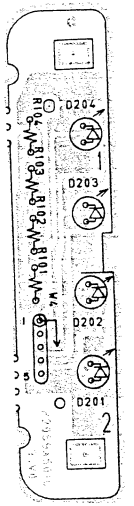
TR1.....E4
TR2.....F4
TR4.....F4
TR8.....E1
TR9.....C3
TR10.....E2
TR11.....E2
TR12.....D,E1
TR13.....D,E2
TR14.....B3
TR15.....C3
TR16.....C3
TR17.....C3
TR18.....A3
TR19.....A3
TR20.....A3
TR21.....A3
TR22.....B5
TR23.....B4
TR24.....C5
TR25.....D4
TR26.....E4
TR27.....C4
TR28.....B5
TR29.....B5
TR30.....E5
TR32.....A3




FRONT PCB P2059A501B




MAIN PCB P2059A501A

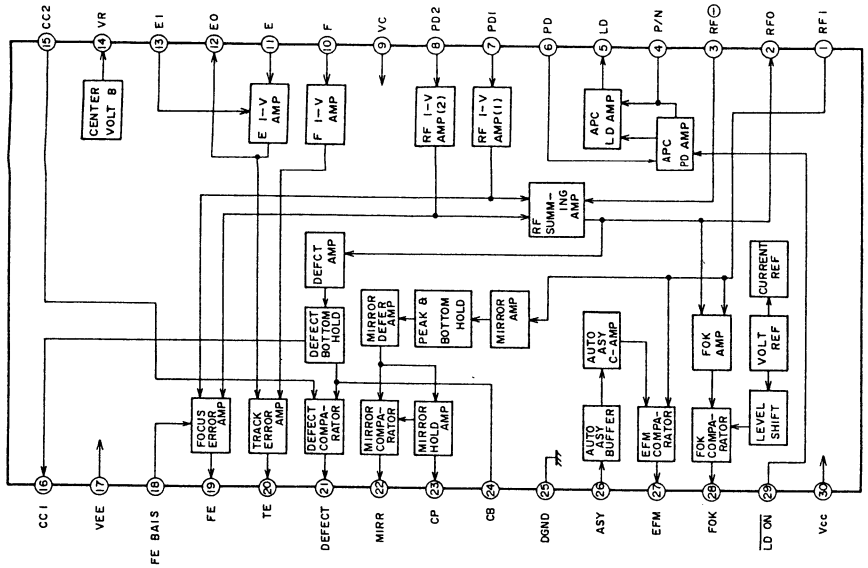



LED PCB
P2059A501C

WARNING ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

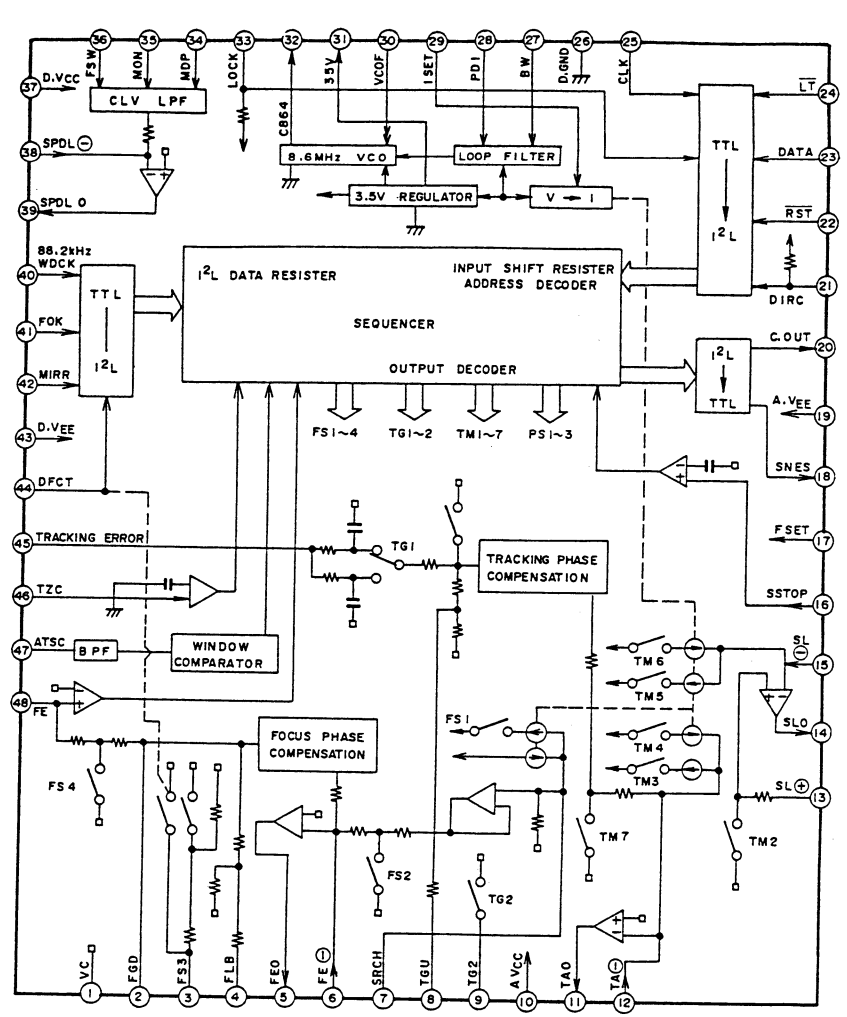
AVERTISSEMENT ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

## CXA1081 (RF AMPLIFIER)



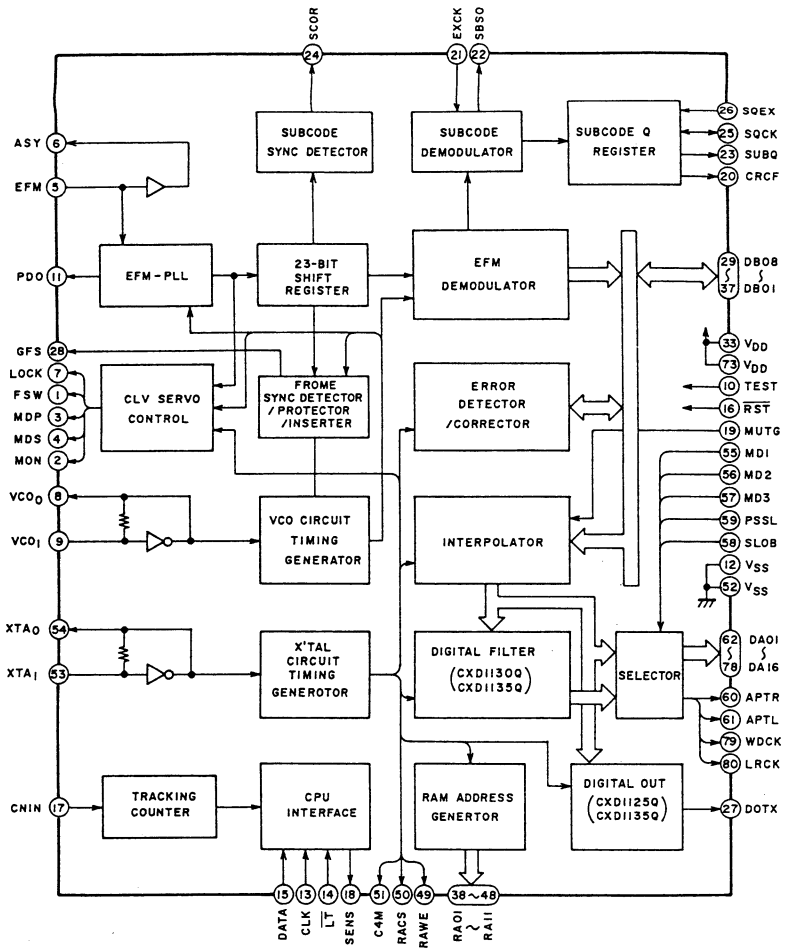

| PIN NO. | SYMBOL | I/O | FUNCTION |
|---|---|---|---|
| 1 | RF1 | I | RF SIGNAL FROM SUMMING AMP |
| 2 | RF0 | O | RF SIGNAL OUT (EYE PATTERN CHECK POINT) |
| 3 | RF⊖ | I | FEED BACK TO SUMMING AMP |
| 4 | P/N | — | NC |
| 5 | LD | O | AUTO POWER CONTROL OUT (TO LASER DIODE) |
| 6 | PD | I | AUTO POWER CONTROL IN (FROM PILOT DIODE) |
| 7 | PD1 | I | A+C SIGNAL RF I-V AMP IN |
| 8 | PD2 | I | B+D SIGNAL RF I-V AMP IN |
| 9 | VC | — | GND |
| 10 | F | I | TRACKING DIODE SIGNAL RF I-V AMP IN (F) |
| 11 | E | I | TRACKING DIODE SIGNAL RF I-V AMP IN (E) |
| 12 | E0 | O | RF I-V AMP (E) OUT |
| 13 | E1 | I | FEED BACK TO RF I-V AMP (E) |
| 14 | VR | — | NC |
| 15 | CC2 | I | DEFECT BOTTOM HOLD IN |
| 16 | CC1 | O | DEFECT BOTTOM HOLD OUT |
| 17 | VEE | — | −B |
| 18 | F·EBIAS | I | FOCUS OFF-SET VOLTAGE IN |
| 19 | FE | O | FOCUS ERROR OUT |
| 20 | TE | O | TRACKING ERROR OUT |
| 21 | DEFECT | O | DEFECT COMPALATOR OUT |
| 22 | MIRR | O | MIRROR COMPALATOR OUT |
| 23 | CP | I | CONNECT MIRROR HOLD CONDENSER |
| 24 | CB | I | CONNECT BOTTOM HOLD CONDENSER |
| 25 | DGND | — | GND |
| 26 | ASY | I | AUTO ASYMMETRY SIGNAL IN |
| 27 | EFM | O | EFM COMPALATOR OUT |
| 28 | FOK | O | FOCUS OK COMPALATOR OUT |
| 29 | LDON | I | LASER DIODE ON/OFF CONTROL IN |
| 30 | VCC | — | +B |

## CXA1082BS (SERVO SIGNAL PROCCESOR)




| PIN NO. | SYMBOL | I/O | DESCRIPTION |
|---|---|---|---|
| 1 | VC | — | GND (0V) |
| 2 | FGD | — | Connect condenser for Focus servo gain control. |
| 3 | FS3 | — | Focus servo gain select. |
| 4 | FLB | — | Connect condenser for Focus servo correction. |
| 5 | FE0 | O | Focus drive output. |
| 6 | FE ⊖ | I | FOCUS AMP. Inverting input. |
| 7 | SRCH | — | Connect condenser for Focus search wave. |
| 8 | TGU | — | Connect condenser for Tracking gain select. |
| 9 | TG2 | — | Connect condenser for Tracking gain select. |

| PIN NO. | SYMBOL | I/O | DESCRIPTION |
|---|---|---|---|
| 10 | A.VCC | —— | +5V |
| 11 | TA0 | O | Tracking drive output. |
| 12 | TA ⊖ | I | Tracking AMP. Inverting input. |
| 13 | SL ⊕ | I | Slide motor non-inverting input |
| 14 | SLO | O | Slide motor drive output. |
| 15 | SL ⊖ | I | Slide AMP. inverting input. |
| 16 | SSTOP | I | Not use (Holded "H" level). |
| 17 | FSET | I | Focus, Tracking compensation and CLV. LPF set up. |
| 18 | SENS | O | FZC. AS. TZC. SSTOP and $\overline{\text{BUSY}}$ output. |
| 19 | A. VEE | —— | −5V. |
| 20 | C.OUT | O | Track count signal output. |
| 21 | DIRC | —— | Not used |
| 22 | $\overline{\text{RST}}$ | I | $\overline{\text{RESET}}$ Input. |
| 23 | DATA | I | Data signal input from CPU. |
| 24 | $\overline{\text{LT}}$ | I | Lutch signal input from CPU. |
| 25 | CLK | I | Clock signal input from CPU. |
| 26 | D.GND | —— | GND (0V). |
| 27 | BW | I | Connect condenser for Loop filter. |
| 28 | PDI | I | PDO signal from IC3 CXD1135Q (Pin 11). |
| 29 | ISET | I | Focus search, Track jump and slide kick current input. |
| 30 | VCOF | I | Connect register for VCO frequency. |
| 31 | 3.5V | O | +3.5V REG. output. |
| 32 | C864 | O | 8.64 MHz VCO output. |
| 33 | LOCK | I | LOCK signal from IC3 CXD1135Q (Pin 7) |
| 34 | MDP | I | MDP signal from IC3 CXD1135Q (Pin 3) |
| 35 | MON | I | MON signal from IC3 CXD1135Q (Pin 2) |
| 36 | FSW | I | Connect condenser for CLV servo error signal LPF. |
| 37 | DVcc | —— | +5V |
| 38 | SPDL ⊖ | I | Spindle drive AMP. inverting input. |
| 39 | SPDLO | I | Spindle drive output. |
| 40 | WDCK | I | Auto sequence clock signal input (88.2 kHz) |
| 41 | FOK | I | Focus OK signal input. |
| 42 | MIRR | I | MIRR signal input. |
| 43 | DVEE | —— | −5V |
| 44 | DFCT | I | Defect signal input "H" active. |
| 45 | TE | I | Tracking error signal input. |
| 46 | TZC | I | Tracking zero cross comparator input. |
| 47 | ATSC | I | ATSC detect window comparator input. |
| 48 | FE | I | Focus error signal input. |





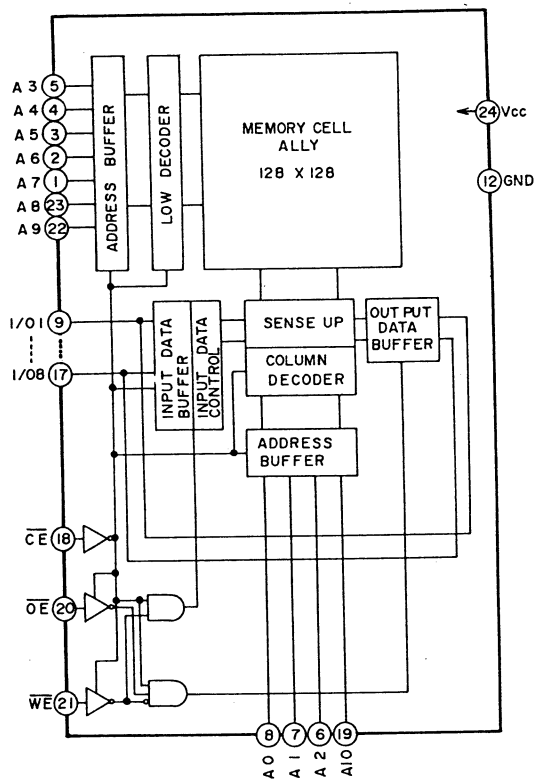



| No. | Symbol | I/O | Description |
|---|---|---|---|
| 1 | FSW | O | Spindle motor filter switching control |
| 2 | MON | O | Spindle motor ON/OFF control |
| 3 | MPD | O | Spindle motor speed and phase control |
| 4 | MDS | O | Spindle motor speed control |
| 5 | EFM | I | EFM signal input |
| 6 | ASY | O | EFM signal slice level control |
| 7 | LOCK | O | Slide motor over reach guard signal output |
| 8 | VCOO | O | VCO output f=8.6436 MHz |
| 9 | VCOI | I | VCO input |
| 10 | TEST | I | OV (GND) |
| 11 | PDO | O | Phase comp.output |
| 12 | VSS | — | GND (OV) |
| 13 | CLK | I | Clock signal from CPU |
| 14 | $\overline{LT}$ | I | Lutch signal from CPU |
| 15 | DATA | I | Serial data from CPU |
| 16 | $\overline{RST}$ | I | RESET input "L" reset |
| 17 | CNIN | I | Tracking pulse input (5V) |
| 18 | SENS | O | Output of CPU interface |
| 19 | MUTG | I | Mute control signal input |
| 20 | CRCF | O | CRC check output of the subcode Q "L" detect error |
| 21 | EXCK | I | NOT USE |
| 22 | SBSO | O | NOT USE |
| 23 | SUBQ | O | Subcode Q output |
| 24 | SCOR | O | Subcode sync detection output |
| 25 | SQCK | I/O | Clock signal for subcode Q |
| 26 | SQEX | I | Select input of CQCK (+5V) |
| 27 | DOTX | O | Digital output |
| 28 | GFS | O | "H" frame sync lock "L" frame sync unlock |
| 29 | DB08 | I/O | Data 8 (MSB) Data Bus line for the EXT.RAM (LC3517BS-15) |
| 30 | DB07 | I/O | Data 7 Data bus line for the EXT.RAM (LC3517BS-15) |
| 31 | DB06 | I/O | Data 6 Data Bus line for the EXT.RAM (LC3517BS-15) |
| 32 | DB05 | I/O | Data 5 Data Bus line for the EXT.RAM (LC3517BS-15) |
| 33 | VDD | — | +5V |
| 34 | DB04 | I/O | Data 4 Data Bus line for the EXT.RAM (LC3517BS-15) |
| 35 | DB03 | I/O | Data 3 Data Bus line for the EXT.RAM (LC3517BS-15) |
| 36 | DB02 | I/O | Data 2 Data Bus line for the EXT.RAM (LC3517BS-15) |
| 37 | DB01 | I/O | Data 1 (LSB) Data Bus line for the EXT.RAM (LC3517BS-15) |
| 38 | RA01 | O | ADDR01 (LSB) Address signal output for the EXT. RAM (LC3517BS-15) |
| 39 | RA02 | O | ADDR02 Address signal output for the EXT. RAM (LC3517BS-15) |
| 40 | RA03 | O | ADDR03 Address signal output for the EXT. RAM (LC3517BS-15) |

| No. | Symbol | I/O | Description |
|---|---|---|---|
| 41 | RA04 | O | ADDR04 Address signal output for the EXT. RAM (LC3517BS-15) |
| 42 | RA05 | O | ADDR05 Address signal output for the EXT. RAM (LC3517BS-15) |
| 43 | RA06 | O | ADDR06 Address signal output for the EXT. RAM (LC3517BS-15) |
| 44 | RA07 | O | ADDR07 Address signal output for the EXT. RAM (LC3517BS-15) |
| 45 | RA08 | O | ADDR08 Address signal output for the EXT. RAM (LC3517BS-15) |
| 46 | RA09 | O | ADDR09 Address signal output for the EXT. RAM (LC3517BS-15) |
| 47 | RA10 | O | ADDR10 Address signal output for the EXT. RAM (LC3517BS-15) |
| 48 | RA11 | O | ADDR11 (MSB) Address signal output for the EXT. RAM (LC3517BS-15) |
| 49 | RAWE | O | Write enable signal output "L" active |
| 50 | RACS | O | Chip select signal output "L" active |
| 51 | C4M | O | 1/4X'tal OSC.output (f=4.2336MHz) |
| 52 | Vss | — | GND(0V) |
| 53 | XTAI | I | X'tal OSC. input (f=16.9344MHz) |
| 54 | XTAO | O | X'tal OSC.output (f=16.9344MHz) |
| 55 | MD1 | I | Mode select input 1 0V (GND) |
| 56 | MD2 | I | Mode select input 2 0V (GND) |
| 57 | MD3 | I | Mode select input 3 0V (GND) |
| 58 | SLOB | I | 0V (GND) |
| 59 | PSSL | I | 0V (GND) |
| 60 | APTR | O | Aperture correction signal output "H" R-channel |
| 61 | APTL | O | Aperture correction signal output "H" L-channel |
| 62 | C1F1 | O | NOT USE |
| 63 | C1F2 | O | TP-C1F2 |
| 64 | C2F1 | O | NOT USE |
| 65 | C2F2 | O | NOT USE |
| 66 | C2FL | O | TP-CSFL |
| 67 | C2P0 | O | NOT USE |
| 68 | RFCK | O | NOT USE |
| 69 | WFCK | O | TP-WFCK |
| 70 | $\overline{\text{PLCK}}$ | O | NOT USE |
| 71 | UGFS | O | NOT USE |
| 72 | GTOP | O | NOT USE |
| 73 | VDD | — | +5V |
| 74 | RA0V | O | NOT USE |
| 75 | 4CLR | O | NOT USE |
| 76 | $\overline{\text{C210}}$ | O | $\overline{\text{C210}}$ INV.C210 (Pin 77) f=2.1168MHz |
| 77 | C210 | O | NOT USE |
| 78 | DATA | O | Data output |
| 79 | WDCK | O | Worde clock output 88.2kHz strobe |
| 80 | LRCK | O | NOT USE (L-ch, R-ch clock output) |



LC3517BS-15 (16kBIT RAM)




TRUTH TABLE

| MODE | CE | OE | WE | I/O |
|---|---|---|---|---|
| READ CYCLE | L | L | H | DATA OUT |
| WRITE CYCLE | L | * | L | DATA IN |
| OUTPUT DISABLE | L | H | * | HIGH IMPEDANCE |
| INHIBIT | H | * | * | HIGH IMPEDANCE |

| Pin No. | SYMBOL | I/O | FUNCTIONS |
|---|---|---|---|
| 1 | S3 | O | FLD segment drive output |
| 2 | S2 | O | |
| 3 | S1 | O | |
| 4 | S0 | O | |
| 5 | OPEN SW | I | Disc tray open detection switch input |
| 6 | CLK | O | Clock output for LSIs |
| 7 | DATA | O | Searial data output for LSIs |
| 8 | CLOSE SW | I | Disc tray close detection switch input |
| 9 | BUS CLK | I | Clock input |
| 10 | SCOR | I | Sub code request input |
| 11 | SUBQ | I | Sub code-Q data input |
| 12 | SENS | I | SENS signal input from IC2 |
| 13 | CRCF | I | Input of result of sub code-Q error check (CRC) |
| 14 | FOK | I | Input of focus OK signal |
| 15 | GFS | I | Input of GET FLAME SYNC signal |
| 16 | BUS DATA | I | Data input |
| 17 | XLT | O | Latch control data output |
| 18 | SQCK | O | Reading clock output for sub code-Q |
| 19 | BUS CLOCK | O | Bus clock output |
| 20 | BUS DATA | O | Bus data output |
| 21 | KEY 1 | I | Key return 1 |
| 22 | KEY 2 | I | Key return 2 |
| 23 | SLED IN SW | I | Pick up block innermost detection switch input |
| 24 | OSC STOP | O | VCO OSC stop control signal output |
| 25 | XRST | O | Reset output for LSIs. H : OSC stop |
| 26 | MUTG | O | Mute control output. H : Mute on |
| 27 | F OUT | O | Direction control output for loading motor drive IC BA6029AN |
| 28 | LASER ON/OFF | O | Laser diode on/off control output. H : Laser on |
| 29 | R OUT | O | Direction control output for loading motor drive IC BA6029AN |
| 30 | X 1 | I | Main clock input |
| 31 | X 2 | O | Main clock output |
| 32 | Vss | | GND |
| 33 | XT 1 | | Not used |
| 34 | XT 2 | | Not used |
| 35 | LED 1 | O | Optical link 1 LED control output. H : LED light |
| 36 | LED 2 | O | Optical link 2 LED control output. H : LED light |
| 37 | LED 3 | O | Optical link 3 LED control output. H : LED light |
| 38 | LED 4 | O | Optical link 4 LED control output. H : LED light |
| 39 | RESET | I | Reset signal input |
| 40 | 1G | O | |
| 41 | 2G | O | |
| 42 | 3G | O | FLD digit control output |
| 43 | 4G | O | |
| 44 | 5G | O | |
| 45 | 6G | O | |
| 46 | 7G | O | |
| 47 | 8G | O | |
| 48 | | | Not used |
| 49 | | | Not used |
| 50 | S15 | O | FLD segment control output |
| 51 | S14 | O | |
| 52 | S13 | O | |
| 53 | S12 | O | |
| 54 | S11 | O | |
| 55 | S10 | O | |
| 56 | VOL AD | | -30 V |
| 57 | VP PRE | | - 4 V |
| 58 | S9 | O | FLD segment control output |
| 59 | S8 | O | |
| 60 | S7 | O | |
| 61 | S6 | O | |
| 62 | S5 | O | |
| 63 | S4 | O | |
| 64 | Vdd | | + 5 V |